

**REMARKS**

Claims 1-4 and 11-17 are pending in the application.

Applicants' undersigned representative thanks the Examiner and his supervisor for the telephone interview on July 16, 2009.

Claims 1-4 and 11-17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Swartz et al in view of Rafii et al.

Applicants respectfully traverse this obviousness rejection.

Firstly, a person of "ordinary" skill in the art would be disinclined to modify Swartz et al to delete and change aspects of Swartz et al whilst introducing aspects of Rafii et al that would make Swartz less user-friendly and more complicated:

In Swartz, a portable device (see Fig. 1) is carried through the store by a user who points the device at bar codes on to-be-purchased items. An item need not even be on a surface when the device is pointed at the item's bar code – thus Swartz's device is easily used in a handheld, point-and-scan way, *without* even needing a traditional check-out, with its scanning surface, and backed-up line of customers. A person of "ordinary" skill in the art would be disinclined to modify Swartz to *re-introduce* problematic check-out surface area yet that is what the office action proposes. To a person of "ordinary" skill in the art, reverting to a surface-bound approach (a la Rafii) would seem disadvantageous and to destroy an important advantage of Swartz.

Also, in Swartz the device's user has only to point the device at the bar code. A person of "ordinary" skill in the art would be disinclined to modify Swartz to *complicate* what the user of the portable device must do. To a person of "ordinary" skill in the art, reverting to the need for user typing and keystrokes (a la Rafii) would be disadvantageous and destroy an important advantage of Swartz.

Under, MPEP 2143.01.V, a proposed combination cannot render the prior art (Swartz) unsatisfactory for its intended purpose. Under MPEP 2143.01.VI, the proposed modification cannot change the principle of operation of a reference. The Examiner's

proposed modifications to Swartz violate these principles.

Moreover, even with the two references, a person of “ordinary” skill in the art still lacks Applicants’ claimed positioning system. The Examiner cites Rafii as allegedly disclosing a positioning system which recognizes a signal from the remote activator device and determines where and how to find a blank surface, wherein the positioning system receives local information that the remote activator device transmits to the positioning system for use in determining where and how to find a blank surface; and wherein the positioning system uses a positioning algorithm to determine where and how to find a blank surface, citing col. 18, line 64, Abstract, col. 2, line 44, col. 4, lines 60-61, col. 8, line 66 and Fig. 1. (Office action, sentence bridging pages 2-3.) But that is not what Rafii actually discloses.

Firstly, col. 18, line 64 of Rafii is as follows: “Software **265** upon execution by a CPU such as CPU **270** may be used to implement an algorithm or routine to recognize what virtual keys are being typed upon by a user”. That is, the algorithm in that part of Rafii is directed to recognizing which letter, “A” or “B” etc., the user is “typing”. By that time, the blank space already had been located (namely, by the user using basic common sense and visually finding a blank space) and the virtual keyboard had been projected onto the blank space already.

Next, the Rafii Abstract is no closer to Applicants’ positioning system. The Rafii Abstract discloses: “A sensor capture three-dimensional positional information as to location of the user’s fingers in relation to where keys would be on an actual keyboard. This information is processed with respect to finger locations and velocities and shape to determine when virtual keys would have been struck.” But Applicants’ claim recites otherwise, and Rafii does not disclose what Applicants’ claim recites. Rafii’s use of three-dimensional positional information about the user’s fingers occurs after the virtual keyboard already has been projected onto the blank space, and therefore is clearly different from, and irrelevant to, Applicants’ claim.

Next, the Examiner has cited col. 2, line 44 of Rafii, but that is only “a Korth-type

application, to track position of a user's fingers" that is discussed in the Background to Rafii's invention. Rafii merely explains the problems with trying to use a Korth-type technique to track user's fingers because traditional video cameras output two-dimensional image data and suffer from data ambiguities in distinguishing shapes and distances making detection of typing motions very difficult. Clearly the Korth-type application only comes into play after the imaginary keyboard already has been established onto a blank space and the user is typing onto it. That is irrelevant to Applicants' claim.

The Examiner then cites Rafii's col. 4, lines 60-61 in which "three-dimensional positional information is received and converted". The three-dimensional positional information that is under discussion there in Rafii is of the user's typing fingers typing onto the keyboard which, again, *already* had been established onto a blank space.

Thus, the positional information in Rafii is not what is recited in Applicants' claim which recites "where and how to find a blank space" referring to a blank surface within the store onto which the virtual keyboard can be projected. Moreover, Rafii does not disclose to use positioning information to *select* a blank surface – Rafii only uses positional information to *interpret* what the user's fingers do on the *already-existing* virtual keyboard. For example, you can see that col. 2, line 52 is speaking of "virtual typing" and that the virtual screen was already set up to be displayed, namely, at col. 2, line 37 on the table top or other work surface that Rafii assumes to be present. Rafii completely does not address the problem of when the user is in a store and does not happen to already have a blank table top or other work surface right in front of him or her. Rafii never instructs *how/where* to find the empty space. Rafii necessarily leaves to the human user to either have an empty space in front of him, or to go searching, by his own eyes, for an empty space.

Rafii fails to teach or disclose a "positioning system which recognizes a signal from the remote activator device *and determines where and how to find a blank surface*". Rafii fails to teach or disclose that "a positioning algorithm to determine the sales

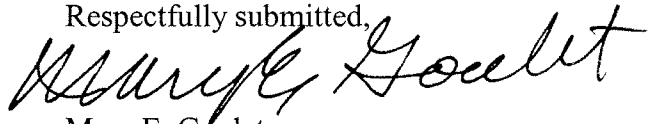
associate's location and to determine where and how to find a blank surface". Rafii does not teach to be concerned with the geographical location of the "sales associate" as a whole person, but rather to be concerned with fine movements of individual fingers of a human user. Nor does Rafii teach to be interested in where and how to find a blank surface. Rafii's system for sensing the fine movements of a typist's fingers does not suggest Applicants' "positioning system" in Claim 1.

Reconsideration and withdrawal of the obviousness rejection are respectfully sought.

In view of the foregoing, Applicant submits that Claims 1-4 and 11-17 are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed.

Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Applicants' Deposit Account No. 50-0510 (IBM Corporation).

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Mary E. Goulet", written in a cursive style.

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